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ABSTRACT

A high-strength austenitic stainless steel strip excellent in flatness of shape with Vickers hardness of 400 or more is newly proposed, which has the composition consisting of C up to 0.20 mass %, Si up to 4.0 mass %, Mn up to 5.0 mass %, 4.0-12.0 mass % Ni, 12.0-20.0 mass % Cr, Mo up to 5.0 mass %, N up to 0.15 mass % and the balance being Fe except inevitable impurities under the condition that a value Md(N) defined by the formula (1) is in a range of 0-125. It has a dual-phase structure of austenite and martensite involving reverse-transformed austenite at a ratio of 3 vol.% or more. It is manufactured by solution-heating a steel strip having the composition, cold-rolling the steel strip to generate deformation-induced martensite, and then re-heating at 500-700°C to induce reversion. The reversion effectively flattens a shape of the steel strip.

 $Md(N) = 580 - 520C - 2Si - 16Mn - 16Cr - 23Ni - 26Cu - 300N - 10Mo \cdots (1)$